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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GORDON, BRIAN R

ART UNIT	PAPER NUMBER
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1743

10

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/486,531

Applicant(s)

HUSAR ET AL.

Examiner

Brian R. Gordon

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-95 is/are pending in the application.
- 4a) Of the above claim(s) 13-24 and 43-83 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 25-42 and 84-95 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-12, 25-42, and 84-95 in Paper No. 9 is acknowledged.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. PCT/EP98/05146, filed on August 13, 1998.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.

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- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The proper section headings are missing.

3. The spacing of the lines of the specification is such as to make reading and entry of amendments difficult. New application papers with lines double spaced on good quality paper are required.
4. The claims are objected to because the lines are crowded too closely together, making reading and entry of amendments difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).
5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

6. The disclosure is objected to because of the following informalities:

On pages 14 and 15 reference numeral 1 designates both a "reservoir" and a "proportioning control". OK

keep On pages 14 and 15 reference numeral 14a designates both an "inlet valve" and a "non-return valve".

On page 15 reference numerals 1 and 9 designate the "proportioning control". OK

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On page 21 reference numeral 68 designate both a "delivering means" and a "proportioning chip". *OK*

On page 22 reference numerals 60 and 80 designate the "balloon". *OK*

On page 22 reference numeral 19 designates both a "through" and a "proportioning control". *OK*

On page 22, line 4 of the fourth complete paragraph, the word "in" at the end of the line should be deleted. *OK*

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-12, 25-42, and 84-95 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 2-5, 8, 10, and 36, it is unclear what is meant by the phrase "the proportioning control controls (or controlling in claim 36) the micro-diaphragm pump into the pumping mode"; for clarity the examiner, asserts that the verb controls, should be replaced with a verb such as directs, moves, places, changes, or any other synonym.

As to claims 6-7, 11, 26, 37, 40, it is unclear what is meant by "controls the volume". Does this mean the flow of the volume, changing the actual volume by adding to or subtracting from it, or some other means of control?

As to claim 3, it is unclear what element of the invention is "reversed".

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As to claims 4-7, it appears as if the term "an open jet" should be "the open-jet proportioner" (of claim 1).

As to claims 10 and 36, it is unclear what is the "one or the other direction" and what element is moved in these directions.

As to claim 12 and 42, the word "components" should be deleted from the claims. Claims 12 and 42 as drafted recite "and/or" which gives one the option to choose. If one reads the claims with "or" for every occurrence of the term, such as "micro-diaphragm pump or open-jet proportioner or reservoir or proportioning control", then one may be allowed to select just one of the elements, which does not constitute a combination. To claim the combination, the examiner suggests such language as "wherein at least two or more of the group including said micro-diaphragm pump, open-jet proportioner, reservoir, or proportioning control are combined....."

As to claim 31 the word "an" should be inserted before "electric".

As to claim 39 it is unclear what the word "it" is referencing.

As to claim 40, it is unclear if applicant is intending to further limit the device by claiming it comprises two sensors. Its not clear if the sensors are actually being claimed.

As to claims 90-91 it is unclear what is meant by the term "especially"

9. Claim 1 recites the limitations "the liquid", "the entrance", and "the exit" in lines 2, 3-4, and 5. There is insufficient antecedent basis for these limitations in the claim.

10. Claims 2-3, 8, 10, and 36 recite the limitation "the pumping mode". There is insufficient antecedent basis for this limitation in the claims.

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11. Claims 2-5, 8, and 10 recite the limitation "the non-operative state/position".

There is insufficient antecedent basis for this limitation in the claims.

12. Claims 6-7, 9, 11, 26, 37, and 39-40 recite the limitation "the volume". There is insufficient antecedent basis for this limitation in the claims.

13. Claim 6 recites the limitation "the displacement volume". There is insufficient antecedent basis for this limitation in the claim.

14. Claims 7, 9, 11, 26, 37, and 39 recite the limitation "the stroke volume". There is insufficient antecedent basis for this limitation in the claims.

15. Claims 10 and 36 recite the limitation "the one or the other direction". There is insufficient antecedent basis for this limitation in the claims.

16. Claims 25 and 36 recite the limitations "the entrance", and "the exit" in lines 3-4. There is insufficient antecedent basis for these limitations in the claims.

17. Claims 27 and 38-40 recite the limitation "the meniscus". There is insufficient antecedent basis for this limitation in the claim.

18. Claim 27 recites the limitation "the liquid" in 2. There is insufficient antecedent basis for this limitation in the claim.

19. Claim 29 recites the limitation "the dispensing tube" in line 1. There is insufficient antecedent basis for this limitation in the claim.

20. Claim 30 recites the limitation "the base region" in line 2. There is insufficient antecedent basis for this limitation in the claim.

21. Claim 32 recites the limitation "the sensor" in line1. There is insufficient antecedent basis for this limitation in the claim.

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22. Claim 33 recite the limitations "the display" and "the operating means" in line 2.

There is insufficient antecedent basis for these limitations in the claim.

23. Claim 34 recites the limitation "the middle region" in line 2. There is insufficient antecedent basis for this limitation in the claim.

24. Claim 35 recite the limitations "the power supply" and "the head region". There is insufficient antecedent basis for this limitation in the claim.

25. Claim 40 recites the limitation "the spacing". There is insufficient antecedent basis for this limitation in the claim.

26. Claim 41 recites the limitation "the displacement means". There is insufficient antecedent basis for this limitation in the claim.

27. Claim 91 recites the limitation "the connecting lines". There is insufficient antecedent basis for this limitation in the claim.

The claims of the present application are replete with numerous occurrences of insufficient antecedent basis. The examiner has made an effort to address each occurrence; however, applicant may also want to review the claims to ensure that all have been found and corrected properly. Generally, when an element is claimed or identified in the claims for the first time it is done so by using the articles "a" or "an" and so afterwards the elements may be referred to as "the".

28. The term "especially" in claims 90-91 is a relative term which renders the claim indefinite. The term "especially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term expresses

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a preference; however, it is unclear if applicant is attending the claim that the elements are located at a particular location within the invention.

Claim Rejections - 35 USC § 103

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

30. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

31. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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32. Claims 1-12, 25-32, 36-39, 42, 84-89, 92-95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rokugawa et al. US 5,554,811 in view of Guinn US 3,572,552.

Rokugawa discloses an automatic chemical analyzer which is able to precisely sample specimens and reagents even if their sampling quantities per one time are quite small, thereby increasing measurement accuracy. One embodiment of the invention is an automatic chemical analyzer having a sampling system in which a liquid including a specimen and a reagent is sampled by sucking the liquid at one position and discharging the sucked liquid at another position, resultant chemical reaction between the specimen and the reagent being detected as an absorbance data collected for chemical analysis, the sampling system comprising: a pump having a pumping chamber for sucking and discharging the liquid; a tube having one end connected to the pumping chamber; a nozzle connected to another end of the tube; an element for driving the pump to sample a certain quantity of the liquid by sucking and discharging the liquid; a sensor for sensing an operating quantity of the pump and generating a signal corresponding to the operating quantity; an element for determining the sampling quantity sampled by the pump in response to the signal from the sensor; and an element for correcting the collected absorbance data in accordance with the determined sampling quantity.

As seen in the figures the device comprises numerous reservoirs, for example reservoir 56, is connected to diaphragm pump 16, which in turn is connected to a proportioner or pipetting probe 13a. The device also comprises a control unit 4. In the

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control unit 4, there is provided a first control part 70 for controlling the sampling pumps 16 and 25 and processing collected data and a second control part 71 for controlling the other components of the analyzer. Further, in the first control part 70, there is provided a data collecting circuit 80 for collecting the data of absorbances time-dependently detected by the optical measuring device 33. The data of absorbances will then be sent out to the data correction circuit 79.

The sampling system, including the pipetting probe 13a (22a), the sampling pump 16 (25), and the calculation and detection circuits 76 and 82, includes a multipurpose sensing function: liquid level detectability (meniscus) and detection of error states. Therefore, it is not required to have a large number of independent sensors and processing circuits. As a result, their sensing construction is remarkably simplified and made compact, thus lowering manufacturing cost.

Rokugawa et al. does not disclose that the pipette probe is an "open jet proportioner" or that comprises an exchangeable pipette tip that comprises a proportioning port.

Guinn discloses diaphragm dispensers of liquid and, more particularly, a new improved diaphragm type dispenser wherein the diaphragm incorporated in the design of the device is operative so as to permit charge chambers of the device to be filled in the desired manner and, subsequently, discharged as required.

It would have been obvious to one of ordinary skill in the art to recognize that the device of Rokugawa et al. may be modified to include the diaphragm dispenser (open jet proportioner) Guinn to transfer liquids.

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As to the proportioning port, it is well known in the art that plastic, disposable, pipette tips (comprising "proportioning ports") are used in conjunction with pipetting probes or dispensers in order to reduce the occurrence of cross-contamination when employing a single device to sample or transfer multiple liquids for analysis. It would have been obvious to one of ordinary skill in the art to recognize that exchangeable pipette tips may be employed in the modified device of Rokugawa in order to further prevent cross-contamination.

As to claims 12, 25, and 42 which recites that the micro-diaphragm pump and the reservoir are combined to form one exchangeable element, it would have been obvious to one of ordinary skill in the art to recognize that the pump of Rokugawa may be considered to meet the limitation as claimed by applicant, for the pump is said to comprise a pumping chamber (constituting a reservoir) in which the liquid resides for subsequent discharge.

Allowable Subject Matter

33. Claims 33-35, 41 and 90-91 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Rokugawa et al. does not disclose nor fairly suggest that the device comprises the proportioning control, the display, or that the operating means is accommodated on a joint printed circuit board, that the power supply is accommodated at the heat region of the actuator module, a displacement means that has a screw including a servo-drive and a screw nut and a sensor mounted on the screw. Rokugawa also does not disclose

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that the device comprises a cooling means and/or heat insulation for liquid in the reservoir, or a heating means for the liquid in the micro-diaphragm pump, the open-jet proportioner, and/or the connecting lines.

Conclusion

34. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shu et al. Tanaka et al., Sakai et al., Flesher, Rokugawa et al. (,051), Husby et al., Sanuki (,961 and ,583), Lurz, Whitehead et al., Hasskamp, Lalin (,248 and ,814), Berglund, Haase et al., and Byrd disclose liquid transfer devices.

Although not prior art, Staats, Seher et al., Singh et al., Moles, Aoki, Miyake et al., Swierkowski, Anderson et al., and Uffenheimer, disclose pertinent information related to the subject matter of applicants disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is (703) 305-0399. The examiner can normally be reached on M-F, with 2nd and 4th F off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 703-308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7719 for regular communications and (703) 305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

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August 12, 2002


Jill Warden
Supervisory Patent Examiner
Technology Center 1700